

The medulla spinalis and its membranes were perfectly sound. I was struck with the facility, with which the medulla spinalis, after its membranes were peeled off, could be divided from one end to the other into an indefinite number of strings or cords, running parallel with one another, like the fibres of a piece of white oak. I imagine that this test will be found to prove its healthiness, when there is a doubt of its being too hard or too soft.

The remarks upon this case are, 1st, that no satisfactory date can be assigned for the commencement of the softening, or its cause. I am induced to consider it as a consequence of the tumour of the orbit, whose development after the operation caused the absorption of the orbital process of the os frontis, and irritation of the adjacent part of the brain, and of its membranes.

2d. It is surprising that such cerebral disorganization was followed, neither by suspension or derangement of intellect, of the senses, nor of myotility.

3d. That the tumour should have sloughed so completely away under the application of pyroligneous acid. Does not this indicate some unknown power in it over such tumours well worthy of further inquiry and experiment?

4th. The second progress of the tumour reduced the cavity of the antrum, of the orbit, and of the left nostril, into one large excavation, the whole periphery of which was exposed at the time of death. This tumour, though it shoved the bones opposed to it out of their places, and caused them to drop off, as for example, all the exterior side of the left nostril, and the parietes of the antrum above and in front, as well as the left os nasi, and nasal process of os frontis; did yet secrete patches of bone in its own thickness, and formed for itself an imperfect shell at the back and external side of the antrum, perhaps by the distention of the latter. The septum narium did not give way, but was pushed over to the right side as far as it could go.

ART. X. *Case of Organic Disease of the Brain.* By JOHN WARE, M. D. of Boston.

THE subject of this case was a lad aged nearly ten years, who had usually enjoyed good health, and had never been liable to pain, or any other symptom affecting the head. Previously to my seeing him, he had for some time complained of pains in the head, which came on

towards evening, but went off during the night, so that he awoke in the morning apparently in his usual health. A few days before I first saw him, he had received a blow in the side from another boy, which caused him to fall with some violence. His belief was, that he did not strike his head; but whether he did or not, it is certain that the jar given by the fall, was such as to produce very serious consequences upon the brain. He was stunned, and upon rising, was dizzy and bewildered, so as not to be able at first to find his way into the house. These effects, however, soon went off, but his evening paroxysms became afterwards more severe, and were accompanied once or twice by nausea and vomiting.

*April 14th*, 1828, I first saw him, being in attendance upon another patient in the same house, and advised some remedies. As he was, however, very averse to taking medicine, and particularly as he was so comfortable for a considerable part of the day, his parents did not insist upon the course recommended, and no essential alteration took place for more than a week.

*April 24th*, he became much worse, and I saw him again. At this period he presented the following symptoms:—The pains in the head were very severe, and the paroxysms had become more frequent, and extended throughout the whole day. The pain, although nearly constant in some degree, became at times so excruciating as to cause him to cry out loudly; and whilst it continued, he wished to have his head held, and pressed very tightly by his mother's hands, across the forehead, which was its principal seat. There was considerable sensibility to light and sound; no dilatation of the pupils, and no imperfection of vision whatever, except that on the day on which he grew worse, he complained for a short time that "things looked as if the air was full of smoke." The respiration was generally slow, though liable to be quickened from slight causes. The pulse varied without any assignable cause from 56, which was the lowest number noted, to 84. It was generally about seventy, but was raised by the operation of medicines, or by any other excitement or irritation to 100 or even more. When not excited, it was irregular with regard to the length of the interval between the beats, but was never, that I observed, intermittent. The tongue was covered at first with a thin, white coat, which after a short time became brown and dry. The stomach was extremely irritable; vomiting often took place spontaneously, and was constantly produced by slight causes. It was alleviated only by the operation of cathartics.

At this period the treatment consisted in the repeated application of leeches and blisters to the head. Both of which, however, irritated

and disturbed him very much, and were not well borne, particularly the latter. Free purging was also employed, but it was very difficult at first to get medicines to operate well, as much from the tendency to throw them up from the stomach, and from his aversion to taking them, as from the torpid state of the bowels themselves. In the course of the three first days he took fifty grains of calomel, twenty of jalap, twelve of the powdered seeds of colchicum, eight of rhubarb, and nearly two drops of Croton oil, a great part of which was retained, before the bowels were freely moved, and that not without great irritation, pain, and vomiting.

For about three weeks the same plan of treatment was continued, so far as his great unwillingness to submit to remedies would permit. He continued to take considerable doses of calomel, followed by such other cathartics as could be taken or borne on the stomach, with the intention not only of purging, but of affecting the system with mercury. Salivation did not, however, take place. During this period there was no material alteration in the essential symptoms, although they varied much at different times. Upon the whole, however, a gradual but considerable improvement had taken place by the middle of May. Still he continued to have the paroxysms of pain, which were often followed and relieved by spontaneous vomiting, more particularly in the morning. He suffered much also from the pain which accompanied the operation of medicine, but was worse if the bowels became costive. He got some appetite, and although frequently vomiting his food undigested in the morning, he was still able to retain it at other times of the day, and gained some strength. The pulse continued as above described, though perhaps approaching more frequently to the natural standard in respect to frequency and regularity.

This interval of apparent amendment was very short, and about the 20th of May, the symptoms returned in their original force. Leeches and a blister were repeated, and he was then put upon a mercurial course with the advice of Dr. JACKSON, who at this time visited the patient in consultation. Twenty grains of calomel were given daily, and the strong mercurial ointment rubbed freely upon the inside of the thighs. This course was continued for a fortnight, although the quantity administered did not every day amount to that above stated. His mouth did not become affected, yet the system seemed to be decidedly under the influence of the remedy; he gradually improved for the second time. His pulse became more natural, his bowels more regular, his tongue clean, his appetite better, and his stomach more capable of bearing food. Still many of the most

important symptoms of his complaint continued to manifest themselves occasionally, and they were always called forth by the least irregularity or improper indulgence in eating. Even a regular and moderate morning's meal was often followed by a paroxysm of pain, which was only relieved by vomiting.

In the beginning of June, I was absent for a few weeks, and this patient was attended by my friend Dr. GEO. HAYWARD. During this period he continued to amend still more rapidly than before; the mercurial course was suspended, and his apparent convalescence was hastened by the favourable operation of a few doses of castor oil and oil of turpentine on his bowels. Through June, July, and the first part of August, he continued so regularly to amend, that it seemed almost certain that no organic disease of the brain existed. The sulphate of quinine and some other tonics were administered, with a favourable effect upon the state of his stomach; and he was much benefited by riding and walking, but more particularly by sailing. He gained considerably in weight and in strength, and was able to walk some distance. His pulse became entirely natural, his bowels were open without medicine, and he was able to bear plain and simple food in moderate quantity. The least offence, however, with regard to quantity or quality was followed by vomiting and pain in the head; and as his appetite was very good, few days during the summer elapsed in which he had not a paroxysm of pain, often accompanied by vomiting.

*August 17th.* Having been for a few days not so well as usual, he eat a very small quantity of corned beef, which did not readily digest, and produced head-ache; he continued to grow more unwell, and on the 20th, a cathartic was prescribed, which irritated and produced vomiting, without evacuating the bowels. His former symptoms all returned, though with rather less violence than before. But little medicine was given on account of the irritability of the stomach, and the great aversion to taking it, and the bowels were never properly evacuated. Indeed those medicines which were taken and retained, produced no effect whatever. On the 28th he seemed less sensible to what was going on around him, though still capable of taking some notice, and of answering questions rationally; there was also some insensibility of the pupil, but no blindness, and nothing like the fixed glare of hydrocephalus. The next morning he was seized with convulsions, and died in about eighteen hours.

Being absent from town myself on the succeeding day, the head was examined, about ten hours after death, by my friends, Drs.

HAYWARD and M'KEAN. I am indebted to the latter for the following account of the dissection.

*"Appearances on dissection, by J. W. M'Kean, M. D.—External appearance. Face and limbs emaciated; abdomen tumid.*

Head. The integuments adhered very firmly to the cranium at the posterior part, and were unusually vascular. On opening the cranium, the dura mater appeared exceedingly tense. The veins of the pia mater, more particularly those entering the longitudinal sinus, were very large but not distended. The convolutions of the brain were somewhat depressed. There was slight serous effusion under the arachnoid and some portions of coagulable lymph. On removing the upper portion of the left lobe by thin slices, an evident deep-seated fluctuation was perceived, and on opening the lateral ventricle, five or six ounces of a straw-coloured fluid were collected, part of which was from the ventricle of the opposite side, and also from the third ventricle, the opening into which was greatly dilated. The fornix, septum lucidum, and the thalami were unusually firm, and of unusual whiteness. The consistence of the other parts of the cerebrum was natural; numerous red points presented wherever an incision was made. On dividing the tentorium slight adhesions were found between this and the cerebellum. On the left crus cerebelli between the arachnoid and pia mater, a small globular tumour, was seen, one-third of an inch in diameter, of the consistence of the cortical substance, and of a granulated texture. On the inferior surface of the tentorium, near its attachment to the petrous portion of the temporal bone, on the left side, was a bilobated tumour, very firmly adherent, of firm consistence, of an oval form, about one inch in length. In the left lobe of the cerebellum there were two, and in the right lobe three round tumours from one-half to three-fourths of an inch in diameter. On dividing one of them it was found to consist of a firm cyst, containing a substance of a greenish-yellow colour, similar in its external characters to the matter found in encysted tubercles of the lungs. These tumours were imbedded in the convolutions of the cerebellum, and by care could be removed without destroying the texture of the parts. Those in the left lobe were less firmly attached to the pia mater than those in the right. The substance of the cerebellum appeared less firm than natural, but no *ramollissement* existed around the tumours. The pia mater of the medulla oblongata was considerably injected, and a small quantity of serous fluid was found at the base of the brain. The thorax and abdomen were not examined."

During the whole course of this disease the functions of the brain were unaffected in a remarkable degree. There was no failure of the powers of the intellect, memory, sensation, speech, or motion. There was never any thing peculiar in his gait; his manner of walking at different times was determined wholly by the amount of his muscular strength. He moved precisely as any other person would do who was equally weak. His countenance was melancholy and his eye rather heavy. He was generally silent and depressed, and easily moved to tears by very slight causes. So much improvement had taken place during the summer, that I was led to hope the complaint might be primarily an affection of the digestive organs, and that he would finally recover, although I had previously been firmly persuaded of the existence of some organic derangement in the brain. The event shows in how quiescent a state, a very considerable amount of organic disease may remain, so long as the digestive organs can be maintained in a natural and healthy state.

It is interesting to inquire what influence the fall which occurred in the early part of this case may have had in its development. That the disease had been forming for some time before can hardly be doubted, and yet the shock occasioned to the whole brain, may have had a decided influence in accelerating its progress. Some years since a case of hydrocephalus occurred in a lad of the same age, a cousin of the present subject, in whom the first symptoms of the complaint came on immediately after a slip upon the ice, which did not cause him to fall entirely down or to strike his head, but produced in the effort to save himself a very severe jar, the effects of which were felt at once, and were followed by death in less than three weeks. In the brain in this case, nothing was found but a collection of water in the ventricles.

In each of these cases the patients were confident that they did not strike their heads, but experienced a violent shock at the moment of the fall.

*Boston, September 29th, 1828.*